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मानक

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IS 15768 (2008): Textiles - Resistance to ignition of upholstered composites used for non-domestic furniture [TXD 32: Textiles Protective Clothing]



“ज्ञान से एक नये भारत का निर्माण”

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“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक
वस्त्रादि — व्यवसायिक सोफासाजी के लिए फर्नीचर की
अग्नि अवरोधकता — विशिष्टि

Indian Standard

TEXTILES — RESISTANCE TO IGNITION OF
UPHOLSTERED COMPOSITES USED FOR
NON-DOMESTIC FURNITURE — SPECIFICATION

ICS 13.220.40; 97.140

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Chemical Methods of Test Sectional Committee had been approved by the Textile Division Council.

There have been many fire incidents in recent years in public buildings/places, the origin of which could be many, such as, electric short circuiting, ignition, etc. The origin of fire may not be that much dangerous and hazardous as the ease of ignition and spreading of fire due to combustible materials, such as, textiles, plastics, upholstered furniture, etc. Depending upon the type of materials encountered in burning, its ease of ignition and its fire spread properties, the extent of damage to the life and property could be enormous. In order to prevent or minimize the damage to life and property due to such fire risks, formulation of this standard needs no emphasis.

Specification for resistance to ignition of textile materials and assemblies for use in the public buildings/places exist in various developed countries as a fall out of various legislation, Rules or Acts, etc, or directions of local bodies. The trend is increasing in other countries also and India should be no exception to this. This standard lays emphasis on matching the magnitude of threat posed in various places/buildings with commensurate performance levels of fire resistant textile materials so as to ensure safety of the life and property.

This standard is based on BS 7176 : 1995 'Resistance to ignition of upholstered furniture for non-domestic seating by testing composites'. The list of buildings/places under different fire hazard categories have been included as per SP 7 : 2005 'National Building Code of India 2005'.

The composition of the Committee responsible for the formulation of this standard is given in Annex C.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

TEXTILES — RESISTANCE TO IGNITION OF UPHOLSTERED COMPOSITES USED FOR NON-DOMESTIC FURNITURE

1 SCOPE

This standard specifies requirements for the resistance to ignition of upholstered composites used for non-domestic furniture.

NOTE — The levels of ignition resistance have been set after careful consideration of the fire risk of the particular end-use environment involved. These levels do not necessarily reflect the behaviour of the upholstered seating in a fully developed fire.

2 REFERENCES

The following standards contain provisions, which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreement based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<i>IS No.</i>	<i>Title</i>
6359 : 1971 12467	Method for conditioning of textiles Textiles — Assessment of ignitability of upholstered furniture:
(Part 1) : 2005	Ignition source: Smouldering cigarette (<i>first revision</i>)
(Part 2) : 2005	Ignition source: Match-flame equivalent
15612 (Part 2) : 2005	Textiles — Burning behaviour of curtains and drapes: Part 2 Measurement of flame spread of vertically oriented specimens with large ignition source
SP 7 : 2005	National Building Code of India 2005
SP 45 : 1988	BIS Handbook on glossary of textile terms

3 TERMINOLOGY

For the purposes of this standard the definitions given in SP 45 together with the following shall apply.

3.1 Fire Hazard — Potential for loss of life (or injury) and/or damage to property, by fire.

3.2 Fire Risk — Probability of fire causing loss of life (or injury) and/or damage to property.

3.3 Ignition Risk — The probability that ignition will

result if a source of heat is allowed into close proximity or contact with a combustible material.

3.4 Composite — A realistic model arrangement of materials used in the finished product.

4 PERFORMANCE REQUIREMENTS FOR RESISTANCE TO IGNITION

4.1 Ignitability

The upholstered composite shall meet the levels of ignition resistance given in Table 1 when tested in accordance with the test methods specified in Table 1 for the various categories of hazardous places/buildings as specified in Annex A in accordance with SP 7.

NOTE — The ignitability performance specified for upholstered furniture for different end-uses varies according to the level of risk associated with a particular environment as shown in Table 1.

4.2 Durability of Treatment

4.2.1 Carry out the water soaking treatment by the procedure prescribed in Annex D of IS 12467 (Part 1) by subjecting the covering fabric (excluding non-visible cloths such as undersides and platform covers) or fire-barrier fabric before it is conditioned prior to testing in accordance with IS 6359, except that the test specimen shall be dried by any method suitable for the fabric type.

4.2.2 Dry clean the covering fabric or fire-barrier material which is claimed to be dry cleanable as described in Annex C of IS 15612 (Part 2) before it is conditioned prior to testing.

NOTE — Durability of flame retardants can be best ensured only by inherent flame retardant material. Such materials should always be preferred in comparison to those that merely pass the testing as per IS 12467 (Part 1) or IS 12467 (Part 2) after water soaking or dry cleaning as per 4.2.1 or 4.2.2.

5 SAMPLING

5.1 Lot

The quantity of upholstered furniture material of identical type delivered to a buyer against one dispatch note shall constitute a lot.

NOTE — 'Identical' in this clause means that there has been no major basic alteration to a furniture specification. That is, that fibre content, weave and mass per unit area of fabric, density and type of filling, and materials manufacturers have

Table 1 Performance Requirements and Notes on Application of Hazard Categories

(Clause 4.1)

Hazard Category	Requirements ¹⁾	Typical Examples of Places/Buildings	Methods of Test
Low Hazard Category	To pass the:	Annex A	
	a) Smouldering cigarette test		IS 12467 (Part 1)
Moderate Hazard Category	b) Match flame equivalent test	Annex A	IS 12467 (Part 2)
	To pass the:		
	a) Smouldering cigarette test		IS 12467 (Part 1)
	b) Match flame equivalent test		IS 12467 (Part 2)
	c) Crib test, source 1		Annex B
	To pass the:		Annex A
a) Smouldering cigarette test	IS 12467 (Part 1)		
b) Match flame equivalent test	IS 12467 (Part 2)		
c) Crib test, source 2	Annex B		

¹⁾ If a particular premises in the low hazard area is also used for sleeping purposes then that premises shall be assigned the next higher hazard

NOTES

1 It is important to realize that the listing of types of premises under different hazard categories in Table 1 is given for guidance only and that the classification of a particular premises into one of the hazard categories is a decision for staff responsible for fire safety.

2 The examples cited in Table 1 for each hazard category cannot be exhaustive and do not cover all types of possible premises in a hazard category. It will be noted that some of the examples appear in more than one hazard category. This reflects the range of hazards possible under different circumstances for particular types of premises. Other examples, whether or not listed in Table 1, could also fall into more than one hazard category. However, when all the relevant factors have been considered, a particular premises can then be assigned to one hazard category.

3 The classification of a particular premises into one of the hazard categories in Table 1 is a decision for staff responsible for fire safety, for example, building control, fire brigade, licensing authorities, or environmental health authorities. Government departments and other organizations often have their own classifications for upholstered furniture where all the hazards have been assessed and a general policy has been adopted. Such classifications may be different from the examples given in Table 1. Attention is drawn to the following factors when classifying a hazard area:

- a) Statutory requirements and other recommendations;
- b) The Building Regulations and Local Authority Bye-Laws;
- c) Consumer Protection Acts and Safety Regulations;
- d) The National Building Code of India, 2005;
- e) Fire precautions in existing places of work that require clearance from fire authorities;
- f) Fire precautions in existing residential care premises;
- g) Fire precautions in existing places of entertainment and like premises;
- h) Fire precautions in premises used as hotels and boarding houses which require a fire certificate;
- j) Fire safety management in hotels and boarding houses;
- k) Whether or not people sleep at premises;
- m) The level of occupancy;
- n) Whether, in the case of fire, occupants could be expected on their own or whether they would need assistance, for example, babies, children, old and infirm, the invalid, the sick, and those retained by locked doors;
- p) The presence or absence of an automatic fire detection and alarm system, or an automatic fire extinguishing system;
- q) Any special hazards, such as, cooking, heating, live flame effects, smoke effects, low lighting levels, strobe lighting, loud music, drinking, use after dark;
- r) Whether or not the premises are, during times of use, under the control of staff trained in appropriate evacuation procedures; and
- s) The location of the hazard area, namely of floors, whether or not high rise and/or below ground and/or windowless.

all remained the same during the production of the units. Changes in the colour of a product or minor changes in the pattern or weave, for example of the order of 2 picks/cm may be disregarded.

5.2 Random samples from the lot shall be drawn in accordance with the relevant standard on material specification or as per the agreement between the buyer and the seller.

5.3 In absence of relevant Indian Standard or agreement between the buyer and the seller, the upholstered composite material shall be tested every 2 500 units produced or once per month, whichever occurs earlier. Re-sampling shall be done when there is any major basic alteration to a furniture specification (for example, of fibre content, weave or mass per unit area

of fabric, density or type of filling or change of materials manufacturer). Changes in the colour of a product or minor changes in the pattern or weave, for example, of the order of 2 picks/cm, shall not be deemed sufficient reason to necessitate re-testing.

6 MARKING

6.1 Each piece of upholstered composite material shall carry a permanently stitched and clearly readable label with the following information:

- a) Nature and composition of the upholstery material, for example, polyester/cotton blended (50 : 50 percent);
- b) Length and width, in mm and mass, in g/m²;
- c) Name and address of the manufacturer or his trade-mark(s);
- d) The words 'FIRE RESISTANT'; and
- e) Any other information as required by the law in force.

6.2 The minimum size of the graphic part of the label shall be 50 mm × 50 mm. The colour of the label shall

be white with a green border and the words 'FIRE RESISTANT' shall be white and of minimum height 5 mm.

6.3 The following wording shall also appear on the label:

- a) 'Complies with this standard; direct test/predictive test for low hazard (not recommended for use in higher hazard areas); or
- b) 'Complies with this standard for medium hazard (not recommended for use in higher hazard areas)' or
- c) 'Complies with this standard for high hazard (not recommended for use in higher hazard areas)'.

6.3.1 The letters of the wording shall be easily legible and of minimum height 2 mm.

7 PACKING

The upholstery other composite material shall be packed as per the relevant Indian Standard or as agreed to between the buyer and the seller.

ANNEX A

(Clause 4.1 and Table 1)

BROAD CLASSIFICATION OF INDUSTRIAL AND NON-INDUSTRIAL OCCUPANCIES INTO DIFFERENT DEGREE OF HAZARD

A-1 LOW HAZARD OCCUPANCIES

- a) Analytical and/or Q.C. laboratories;
- b) Assembly buildings small;
- c) Clubs;
- d) Day centres;
- e) Dwellings, lodges, dormitories, etc;
- f) Educational and research institutions;
- g) Office premises;
- h) Places of worship; and
- j) Residential buildings (except hotels).

A-2 MODERATE HAZARD OCCUPANCIES

- a) Airport and other transportation terminal buildings;
- b) Assembly buildings;
- c) Casinos;
- d) Computer installations;
- e) Hospitals including 'X' ray and other diagnostic clinics (institutional buildings);
- f) Hostels;
- g) Mercantile occupancies (departmental stores, shopping complex, shopping malls, etc);

- h) Museums, archives, record rooms;
- j) Places of public entertainment (exhibitions, marriage pandals, theatres, cinema halls, etc);
- k) Public buildings;
- m) Public halls;
- n) Public houses and bars; and
- p) Residential apartments, hotels, cafes, restaurants.

A-3 HIGH HAZARD OCCUPANCIES

- a) Hazardous occupancy buildings;
- b) Offshore installations;
- c) Prison cells;
- d) Sleeping accommodation in certain hospital wards and in certain hostels; and
- e) Underground shopping complexes and underground shopping malls.

ANNEX B

(Table 1)

CRIB TEST

B-1 PRINCIPLE

Materials forming an upholstery composite are assembled together on the test rig appropriate to the ignition source being used.

B-2 APPARATUS

B-2.1 Test Rig, as specified in Fig. 1 and 2 of IS 12467 (Part 1), consisting of two rectangular frames hinged together and capable of being locked at right angles to each other. The frames shall securely hold the expanded steel platforms and a standard edging section may be used around the expanded steel to give protection and greater rigidity. The hinge rod shall be continuous across the back of the rig. The frame shall be lockable at right angles to each of the pairs of the members forming the back legs.

B-2.2 Test Enclosure, either a room with a volume greater than 20 m³ (which contains adequate oxygen for testing), or a smaller enclosure with a thorough flow of air (between 0.02 m/s to 0.2 m/s) equipped with inlet and extraction systems.

B-2.2.1 The atmosphere within the enclosure during the test shall have a temperature of 25 ± 5°C and a relative humidity of 50 ± 20 percent. A means of extracting smoke and toxic gases shall be provided for all such enclosures.

B-2.3 Propane-2-ol

B-2.4 Graduated Glass Syringe, or other suitable measuring instrument, capable of measuring 1.4 ± 0.1 ml of propane-2-ol.

B-2.5 Stop Clock, accurate to 1 s and capable of measuring at least 1h.

B-2.6 Crib Ignition Sources

B-2.6.1 Materials and Construction

The cribs shall be constructed from the following:

- a) Dry planks of the softwood *Pinus Kesiya* (Khasi Pine) which have been stored in warm dry conditions for a minimum of one week;
- b) Absorbent surgical lint; approximately 200 g/m² which is cut into nominal squares 40 mm × 40 mm (each square having a mass of approximately 0.3 g); and
- c) Polyvinyl acetate or other suitable wood adhesive for gluing together the sticks and lint.

B-2.6.2 Assembly of the Cribs

B-2.6.2.1 The crib assembly shall have the parameters as specified in Tables 2 and 3. The arrangements of cribs are illustrated in Fig. 1 and 2. The suggested methods of construction are given in B-2.7.

B-2.6.2.2 Select the required number and sizes of sticks conditioned in accordance with B-3 to provide the required total mass and assemble into cribs with the square of lint incorporated, fluffy side uppermost when the crib is standing on its base. The sticks in each layer shall be parallel to one another and at right angles to the sticks in the adjacent layer. The sticks in each layer shall be placed as far away from each other as possible, but without undue overhang at their ends, glued together and the lint secured with small amounts of the adhesive.

Table 2 Parameters of Crib 1 (Ignition Source 1)
(Clause B-2.6.2.1)

Sl No.	Parameter	Requirement
(1)	(2)	(3)
i)	Stick length, mm	40 ± 2
ii)	Stick square section, mm	6.5 ± 0.5
iii)	Number of sticks	20
iv)	Total mass of sticks, g	17 ± 1
v)	Number of layers each of two sticks	10
vi)	Approximate lint dimensions, mm	40 × 40

Table 3 Parameters of Crib 2 (Ignition Source 2)
(Clause B-2.6.2.1)

Sl No.	Parameter	Requirement
(1)	(2)	(3)
i)	Main crib stick length, mm	80 ± 2
ii)	Main crib stick square section, mm	12.5 ± 0.5
iii)	Number of sticks, main crib	18
iv)	Number of layers each of two sticks in main crib	9
v)	Ignition crib base stick length, mm	80 ± 2
vi)	Ignition crib stick length, mm	40 ± 2
vii)	Square section of all sticks in the ignition crib, mm	6.5 ± 0.5
viii)	Number of ignition crib base sticks	4
ix)	Number of ignition crib sticks	6
x)	Number of layers each of two sticks in ignition crib	5
xi)	Total mass of main and ignition crib sticks, g	126 ± 4
xii)	Approximate lint dimensions, mm	40 × 40

B-2.7 Suggested Methods of Construction

B-2.7.1 Crib 1

Glue together 18 sticks to form the main crib body. Stick one square of lint across the main crib body. Stick one square of lint across the crib square section and then glue on the remaining two sticks to form the base (see Fig. 1).

B-2.7.2 Crib 2

Glue together 16 of the main crib sticks to form the main crib body to make construction A. Glue together the six ignition crib sticks plus two of the ignition crib base sticks to form the ignition crib body; stick one square of lint across the ignition crib square section and then glue on the remaining two ignition crib base sticks to form the ignition crib; glue on the remaining two main crib sticks to make construction B (see Fig. 2A). When the adhesive is set, invert construction B and glue it to construction A (see Fig. 2B).

NOTE — A simple way to ensure that the core of the crib is correct is to build the crib around a former. A smooth hardwood block nominally 27 mm × 27 mm × 100 mm is suitable for crib 1 and inner side of crib 2. A hardwood block nominally 55 mm × 55 mm × 155 mm is suitable for crib 2. The sticks are

glued around the block and block removed before the glue sets. For example, crib 1 is made by gluing 18 sticks together, removing the block, fixing lint in place on top and then gluing on the remaining two sticks.

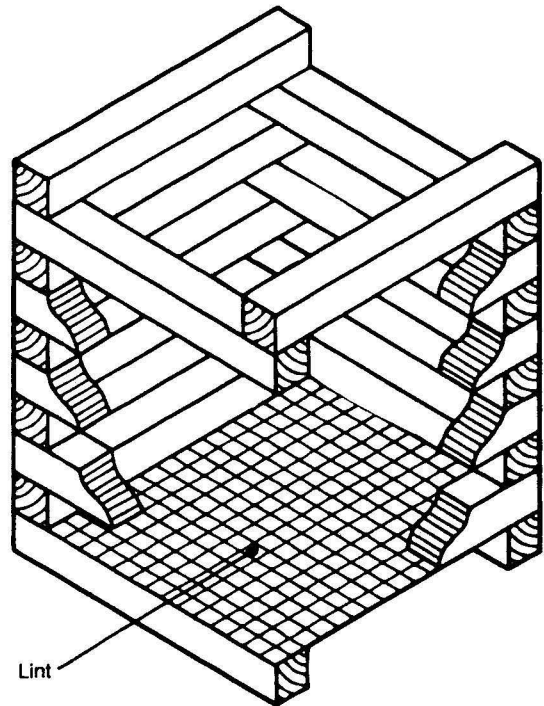


FIG. 1 CRIB 1

B-3 CONDITIONING

The sticks and the cribs shall be conditioned immediately before the test for 72 h in indoor ambient conditions and then for at least 16 h at 25 ± 5°C and 50 ± 20 percent relative humidity.

B-4 TEST SPECIMENS

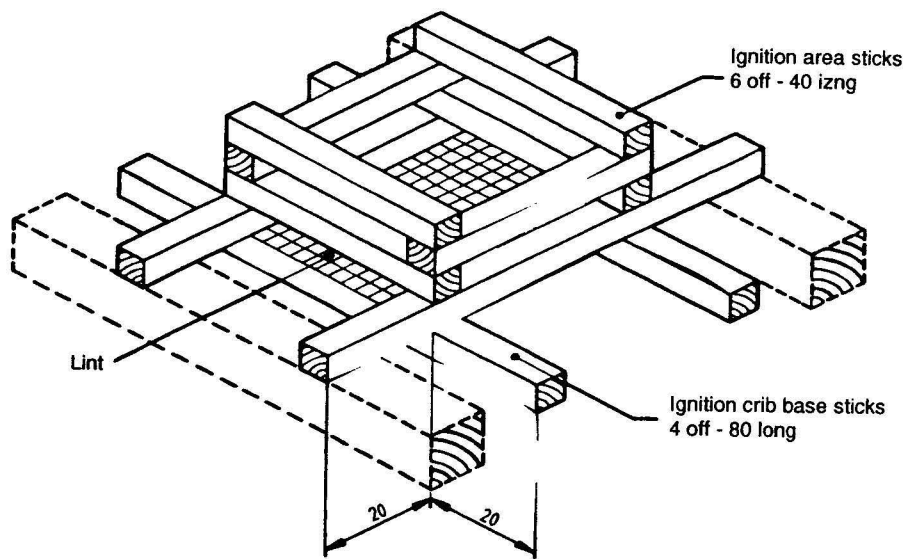
B-4.1 General

The test specimen shall comprise a structure with vertical and horizontal parts of the composite of upholstery materials under test. These materials shall be representative of the cover, filling and other components to be used in the upholstery composites.

B-4.2 Cover Material and Fabric Inter-Liner

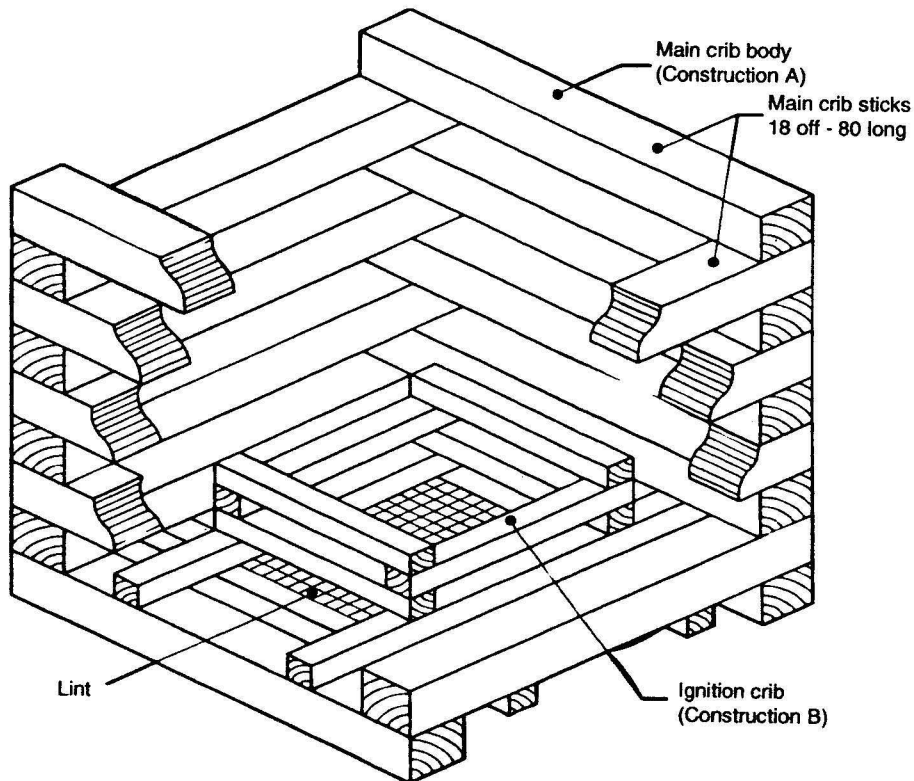
B-4.2.1 Test specimens used shall be as shown in Fig. 3.

B-4.2.2 The long dimension shall be cut parallel to the machine direction. The cover may be constructed from smaller pieces of test materials provided that the resulting seams do not occur within 100 mm of the area likely to be affected by the test or they are located behind the pivot bar. If lack of test materials requires the use of additional alternative material, for example, side extension, their use shall be stated in the test report.



All dimensions in millimetres.

FIG. 2A Crib 2 — Construction B



2B Complete Crib 2

FIG. 2 CONSTRUCTION OF THE CRIBS

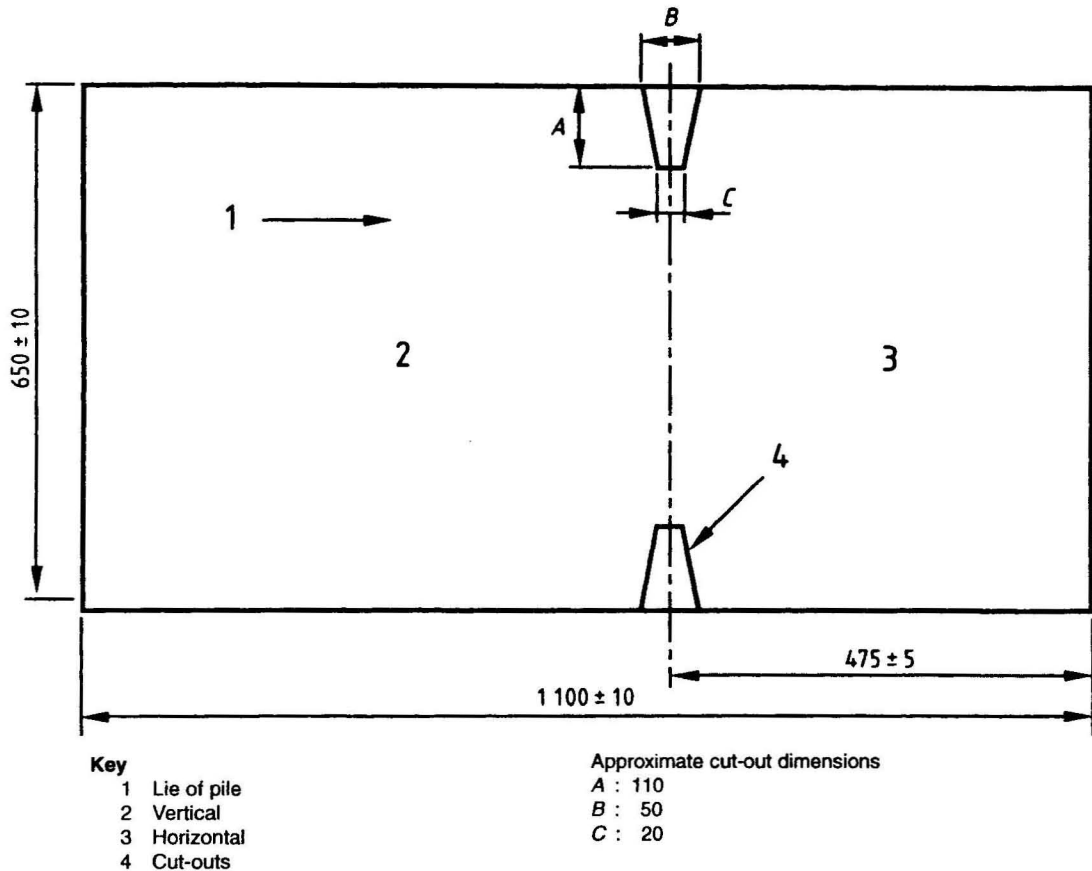


FIG. 3 DETAILS OF TEST SPECIMENS FOR FABRIC COVERS AND INTER-LINERS

B-4.2.3 The cut-outs shall be positioned such that when assembled on the test rig, the lie of the pile is down the vertical assembly and from the hinge to the front of the horizontal assembly. Where a fabric inter-liner is used, it is cut to the same dimensions, and in the same orientation as the cover, for fitting to the rest rig under the cover.

B-4.3 Upholstery Filling

B-4.3.1 It shall consist of two pieces of filling, one $(450 \text{ mm} \pm 5 \text{ mm}) \times (450 \text{ mm} \pm 5 \text{ mm}) \times (75 \text{ mm} \pm 2 \text{ mm})$ thick and the other $(450 \text{ mm} \pm 5 \text{ mm}) \times (300 \text{ mm} \pm 5 \text{ mm}) \times (75 \text{ mm} \pm 2 \text{ mm})$ thick for each test. Some cushioning assemblies may consist of several layers that may be typically felt, wadding or various foams. Where the total thickness exceeds 75 mm, the upper 75 mm of the cushioning assembly is reproduced, except that the upper layer(s) are not continued over and round the edges of the assembly.

B-4.3.2 Where this filling is less than 75 mm thick the test piece shall be built up to the required thickness by adding to the underside a further layer of the bottom material.

B-4.3.3 If lack of test materials requires the use of additional alternative materials such as side extensions, the additional materials shall not be positioned within 100 mm of the ignition source, or above the top of the ignition source if used in the vertical part of the test specimen. The use of additional materials shall be noted in the test report.

B-4.3.4 In case of the loose filling material, for example, foam crumb or feathers, the filling shall be built up beneath the covering materials to reproduce the 75 mm thickness of the assembly at a realistic filling density. Where necessary, a finer grid material or air porous fabric may be laid over the expanded metal of the test rig to retain the filling.

B-4.3.5 If, in use, the loose infill is enclosed in an interlining (or ticking), two bags of the inter-lining suitably filled and to the overall dimensions given above for use as the upholstery filling beneath the cover(s) shall be used.

NOTE — The tests described in this section are unsuitable when used with composites where the loose filling materials flows out of the assembly during the test and either extinguishes, moves or adversely affects the burning of the ignition sources. A more positive result may be obtained with such materials are tested as a complete item of furniture.

B-5 CRITERIA OF IGNITION

B-5.1 General

The ignition criteria shall include both the progressive smouldering and flaming ignition and shall be assessed separately.

B-5.2 Progressive Smouldering Ignition

The following types of behaviour shall be considered as progressive smouldering ignition:

- a) any test specimen that displays escalating smouldering combustion behaviour so that it is unsafe to continue the test and forcible extinction is required;
- b) any test specimen that smoulders until it is essentially consumed or that smoulders to the extremities or the specimen, that is to either side or to the full thickness of the specimen, within the duration of the test;
- c) any test specimen that produces externally detectable amounts of smoke, heat or glowing 60 min after ignition of the crib; and
- d) any test specimen that, on final examination shows evidence of charring within the filling (other than discoloration) more than 100 mm in any direction apart from upwards from the nearest part of the original position of the source.

NOTE — In practice it has been found that there is usually a clear distinction between materials that char under the influence of the ignition source but that do not propagate further (non-progressive) and those where smouldering develops in extent and spreads (progressive).

B-5.3 Flaming Ignition

The following types of specimens shall be considered as flaming ignition.

- a) any test specimen that displays escalating flaming combustion behaviour so that it is unsafe to continue the test and forcible extinction is required;
- b) any test specimen that burns until it is essentially concerned within the test duration;
- c) any test specimen on which any flame front reaches the extremities of the specimen other than the top of the vertical part of the test specimen or passes through the full thickness of the specimen within the duration of the test;
- d) for flaming ignition source 1 any test specimen that continues to flame for more than 10 min after ignition of the crib;
- e) for flaming ignition source 2 any test specimen that continues to flame for more than 13 min after ignition of the crib; and

- f) for all sources; any test specimen from which debris causes an isolated floor fire not meeting the requirements of items (d) or (e).

NOTE — It is recommended that composites which fail criterion (c), for example because the full thickness is penetrated by molten material rather than by flames, are tested as a complete item of furniture.

B-6 PROCEDURE

NOTE — For safety, all tests should be carried out in a suitably constructed enclosure.

B-6.1 Preparation

B-6.1.1 Ensure that the means of fire extinguishing are close to hand.

B-6.1.2 Open out the test rig and thread the covering fabric and, if used, the fabric inter-liner, behind the hinge bar so that the cut outs are aligned with the hinge bar.

B-6.1.3 Place the filling pieces under the covering fabric(s) and locate the filling pieces in the frame recesses.

B-6.1.4 Lock the frames at right angles by the bolts or pins ensuring that the filling components are not displaced. Fasten the fabric(s) over the top, bottom and sides of the frame using clips and secure the fabric(s) under even tension by allowing approximately 20 mm of fabric to wrap around the frame so that the edge of the fabric just contacts the expanded metal.

B-6.2 Wood Crib Tests (Ignition Sources 1 and 2)

B-6.2.1 Use a new specimen for each test. After the assembly of a crib (*see B-2.6.2*) and after conditioning (*see B-3*) it add slowly 1.4 ± 0.1 ml of propane-2-ol to the centre of the lint. Place the crib on the horizontal part in contact with the vertical part of the test specimen, centrally between the sides of the rig. The base sticks of the crib shall be parallel to the vertical surface of the test specimen.

B-6.2.2 Within 2 min of adding the propane-2-ol to the lint, ignite the alcohol from the front and above the lint, using a match, small gas flame or hot wire ignition, and simultaneously start the clock.

B-6.2.3 If the crib collapses causing embers to be scattered over a distance greater than 100 mm measured from the edge of the crib, repeat the test with a new crib placed in position on a new test specimen.

B-6.2.4 Observe for evidence of ignition (*see B-5*) in the interior and/or cover.

B-6.2.5 If flaming or progressive smouldering of the upholstery composites is observed (*see B-5*) extinguish

the test specimen and record ignition for the ignition source used.

B-6.2.6 If flaming or progressive smouldering of the upholstery composites is observed (*see B-5*) repeat the test. If flaming or progressive smouldering is not observed in this retest, record non-ignition for the ignition source used, unless the test specimen fails the final examination specified in **B-6.2.3**. In this case, extinguish the test specimen and record ignition.

B-7 FINAL EXAMINATION

As cases of progressive smouldering undetected from the outside have been reported, immediately after completion of the test programme on the test specimen, dismantle and examine the filling for progressive smouldering. If this is present, extinguish the test specimen and record ignition for the relevant ignition source. For safety reasons ensure that all smouldering has ceased before the rig is left unattended.

ANNEX C

(Foreword)

COMMITTEE COMPOSITION

Chemical Methods of Test Sectional Committee, TXD 05

<i>Organization</i>	<i>Representative(s)</i>
Textiles Committee, Mumbai	DR G. S. NADIGAR (<i>Chairman</i>)
Ahmedabad Textile Industry's Research Association, Ahmedabad	SHRI A. B. SHAH
Bapuji Institute of Engineering & Technology, Davangere	REPRESENTATIVE
Central Institute for Research on Cotton Technology, Mumbai	DR (SHRIMATI) C. R. RAJE
	DR R. H. BALASUBRAMANYA (<i>Alternate</i>)
	REPRESENTATIVE
Clariant India Ltd, Mumbai	SHRI N. C. SOM
Indian Jute Industries' Research Association, Kolkata	DR K. K. GOSWAMI
Jayashree Textiles, Rishra	SHRI A. NAIR (<i>Alternate</i>)
	SHRI KETAN L. GANDHI
	REPRESENTATIVE
L. N. Chemical Industries, Mumbai	DR SANDEEP R. NAIK
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